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ABSTRACT

Technologically Advanced Families (Taffies) were profiled in a study that compared media technologies penetration in North Carolina with national media penetration data. Telephone surveys were conducted in February 1986 by journalism students at the University of North Carolina. Subjects interviewed were 585 North Carolina households to determine their use of such technologies as microcomputers and video recorders. Findings revealed that the penetration of media technologies in these homes matched national penetration data very closely. Taffies were found to exhibit some unique demographic and psychographic characteristics. For example, most (1) had a home computer, a videocassette recorder, and some source of diversity in television; (2) were in relatively high income and education groups and lived in urban settings; (3) were married with school-age children; (4) took vacations and consumed alcohol more than others; and (5) were willing to exert some effort to obtain useful information sources. Race was not found to be a factor associated with Taffies. Results also indicated that personal computers were used to give children new learning opportunities and that video cassette recorders (VCRs) were used to entertain them. Findings supported other research indicating a trend toward the use of more prerecorded videos for "timeshifting" activities among families who had owned VCRs for more than a year. (Tables of data are included.) (JD)

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Media Technology Consumers: Demographics and Psychographics of "Taffies"

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Media Technology Consumers:

Characteristics of "Taffies"

People who own and use media technology to satisfy their needs for information and entertainment are of growing interest to media researchers and social scientists. Market researchers, who brought America the "Yuppie" label, have now given the label of "TAFs" or "Taffies" (for "technologically advanced families") to a segment of American society. Besides owning the latest in media technology and consumer electronics, Taffies are presumed to have a unique demographic and psychographic, or lifestyle, profile.

"I own a PC, a VCR, a condo on the beach and my own company," is the line used in a 1986 national advertising campaign featuring this presumed archetype (Eastern Review, 1986). The Yankee Group, a research firm, estimates that Taffies comprise the 10 percent of U.S. households who would buy a "smart home" ("Quick turn-ons," 1985). Taffies purchase and use "the latest computers, VCRs, stereo TVs, 8mm camcorders (camera recorders), compact disc players, satellite dishes, and dozens of other products," according to Bateman (1986, p. 21). The home computer is the "bedrock of the TAFs" (Bateman, 1986, p. 21) as devices like VCRs, compact disc recorders, and even satellite dishes have become computer peripherals. Taffies are the leaders of the consumer electronics market in its convergence toward all-digital communication devices.

Who are these consumers who buy and use the latest in communication technology? While Taffies recently have been identified in the popular press, research detailing their demographics and psychographics is hard to find outside of proprietary sources. This study provides a descriptive profile of Taffies in one state of the United States, and compares the penetration of media technologies in that state with national data.

METHOD

The data for this study were gathered as part of The Carolina Poll, conducted in February 1986 by students in the School of Journalism at the University of North Carolina at Chapel Hill. The Carolina Poll is jointly sponsored by the School of Journalism and the University of North Carolina Institute for Research in Social Science. Interviewers reached a representative sample of 585 North Carolina households by telephone.

The questionnaire contained items designed to measure the penetration and use of media technologies in the state. It also contained questions about traditional media use and demographic items. The psychographic items were included in the questionnaire originally for other purposes; The Carolina Poll is a bi-annual, statewide survey that addresses many issues. The psychographic analysis has been constructed ex post facto based upon available items and, therefore, is not as rich as one that may have been designed in advance.

A TAF score is used in the study to rank households by their number of media technology units and to discriminate the so-called Taffies from non-TAFs. The TAF score counts six media technology units -- cable TV, VCR, satellite dish, personal computer, telephone modem, and the subscription to a computer database or information service. Each unit is assigned an equal weight in constructing the score or index. The operational definition for Taffies in this study is households with three or more media technology units. This definition comprises 8.2 percent of the study sample, which compares well to national estimates that Taffies comprise 10 percent of the population ("Quick turn-ons," 1985, p. 40).

The suggestion is made earlier that home computers are the "bedrock" of a Taffie household. However, the method used here to compute the TAF score does not require the household to have a computer. A household with cable TV, a VCR and a satellite dish, for example, would qualify as a Taffie household. (A household without a computer would not be expected to have a modem or database subscription.) Only five of the 48 households designated as TAFs in this study did not have a computer. Thus, the "bedrock" criterion was not seriously violated by our TAF index.

Most of the tables in the "Findings" section present two levels of analysis. Comparisons of descriptive variables are made dichotomously between TAF and non-TAF subgroups, and also across subgroups representing the four values of the

TAF score (u = 0,1,2,3+). The highest value (u = 3+) represents Taffies, and the lower three values (u = 0,1,2) may suggest rising amounts of "taffiness" among the non-TAFs.

FINDINGS

Data on the penetration of media technologies in North Carolina are presented first, and comparisons are made with national data. The demographic profile of the Taffies is presented next. Following the general profile, some special observations are made about VCR uses and about computers and children. The psychographic profile and traditional media use characteristics come last.

Penetration of Media Technology in the Home

The level of penetration of media technology in households in North Carolina is very similar to estimates for the entire country. As can be seen in Table 1, close to half of the households in North Carolina and the rest of the country now have cable television service. The number of households in North Carolina with cable has doubled in the past six years. According to the Carolina Poll conducted in 1980, only 24 percent of the homes in the state had cable. Nationally, trends are similar. Industry experts predict that recent deregulation actions and the scrambling of pay channels will result in a second growth spurt of even greater penetration in the next decade (Izzillo & Wolf, 1986).

TABLE 1 ABOUT HERE

About one-third of the homes in North Carolina and the rest of the country now have videocassette recorders. According to a recent study by Wilkofsky Gruen Associates (Forkan, 1986), this level of penetration is expected to double by 1990. Within the next ten years, 85 percent of the households in the United States are expected to have VCRs.

Personal computers are not as prevalent as VCRs, although penetration is increasing dramatically. The 1983 Carolina Poll found 6 percent of the households in North Carolina had ever had a personal computer. Three years later, 14 percent of the state's households report currently owning a personal computer. Nationally, the percentages are just a bit higher at around 19 percent. As the "catalyst, coordinator, and intersection of the converging media" (Behrens, 1986, p. 9), the personal computer is expected to be found in more and more households. In our sample, 14 percent of those with computers also have a modem, which allows them to access external databases or information services. Of those with a modem, 27 percent report subscribing to such services.

The percentages of homes with satellite dishes is slightly higher in North Carolina than it is for the United States as a whole. This may be because the majority of the population in North Carolina lives in rural areas. They would be less likely to have access to cable television and therefore would seek diversity of programming and signal enhancement with their own satellite dishes.

Indeed, our analysis shows that cable penetration is significantly lower in the mountainous regions of the state and satellite dish ownership is significantly higher than in other parts of the state. Of the households in the western mountain region, 11 percent own a satellite dish as compared to 4 and 5 percent in the central piedmont and coastal regions of the state, respectively.

Demographic profile of Taffies

To obtain a better idea of who the technologically advanced families are, we profiled them according to a number of demographic variables and compared them to less technologically advanced families. This profile is presented in Table 2.

TABLE 2 ABOUT HERE

As would be expected, TAF households have higher incomes than non-TAF households. They also have at least one member with more than a high school education. While the tendency is toward greater self-employment in TAF households, the

difference between them and non-TAFS is not statistically significant. Households with more media units also are more likely to be located in urban areas. While race does not make a difference in media technology ownership patterns, marital status and the presence of school-age children certainly do. As can be seen in Table 2, Taffies are more likely to have school-age children than are non-Taffies.

Videocassette recorder uses

Over one-third (39%) of households with school-age children in our study said they use their VCRs "very often" for entertaining children. Only 5 percent of such homes said they never use their VCRs for entertaining children.

Children's videos are now the fastest growing segment of the videocassette market. Tapes developed for children now make up about 20 percent of the total market, according to cassette marketers (Kaplan, 1986). One-third of all videotape rentals will be children's fare by 1995, according to Forkan (1986).

As can be seen in Table 3, frequency of use for entertaining children is not related to how long the VCR has been in the household. About one-quarter of all households use the VCR "very often" for entertaining children, regardless of how long they've owned it.

TABLE 3 ABOUT HERE

Our data show that VCRs are used more frequently for "time-shifting" by households that have had them for three or more years than by new owners. Time-shifting is the ability to tape regular television shows for viewing at more convenient times. According to early studies of VCR uses (Agostino, Terry & Johnson, 1980; Levy, 1980), the average VCR household recorded approximately four broadcasts per week and replayed an average of three or four recordings weekly (Levy, 1984).

While we can't provide statistical confirmation of a trend, a change away from time-shifting toward more use of VCRs for playing prerecorded tapes would be consistent with our data. VCR owners are increasingly able to rent and buy tapes at convenience and department stores. During 1985, the number of video stores doubled, and 30,000 stores are expected by 1987 (Mayer & Sweeting, 1986).

While rentals still account for 98 percent of the prerecorded cassette market, some movie studios have begun to lower the prices of their hit movies so that it may become profitable for retailers to sell cassettes for about the same price as a hardcover book. In 1985, over 22 million cassettes were sold in the United States. The Wilkofsky Gruen study (Barbieri, 1986) estimates that by 1995, if prices continue to drop, 200 million cassettes will be sold each year. Americans also are expected to rent more than 4 billion VCR titles in 1995, up from 700 million in 1985.

Computers and children

Examining the relationship between having children and having computers was of interest for several reasons. One is that children's uses of computers for educational opportunities is a recurring theme in home computer advertisements; marketers clearly see an important relationship here. Another is the demographic relationship reported earlier that Taffies are much more likely to have school-age children than are non-Taffies, combined with the notion that home computers are the "bedrock" of the TAFs.

Table 4 provides a closer look at the association between having school-age children and having a computer at home.

TABLE 4 ABOUT HERE

The first row of Table 4 shows that in homes where school-age children are present, 24 percent also have computers. This is significantly higher than the 9 percent penetration in homes without school-age children. The next row shows the same relationship exists in non-TAF homes. Computer penetration in non-TAF homes with school-age children is 12 percent as compared with 5 percent for non-TAF homes without school-age children. While TAF homes would tend to have computers anyway, having school-age children is significantly associated with having a home computer in our total sample and also among non-TAFs.

We also examined the amount of time children spend with computers at home and whether this is affected by the presence of other media technology in the home. We thought that cable television, satellite dishes, or VCRs might detract from children's time with computers, while modems and online information services could contribute to it. We observed no significant differences in children's time with computers based on any of these variables. Children in homes with computers spend, on the average, 2.4 hours a week using the computer regardless of the availability of other media or whether or not they are in Taffie homes.

Psychographic profile of Taffies

Table 5 compares psychographic, or lifestyle, variables for subgroups who have different amounts of media technology in the home, and particularly for TAFs versus non-TAFs. While other researchers can and should identify other psychographic variables that may be more apt for characterizing Taffies, this set of available variables provides an initial description of their attitudes and lifestyle.

TABLE 5 ABOUT HERE

One variable tapped respondents' lifestyles vis-a-vis a particular television lifestyle -- that reflected in the Bill Cosby Show. The first row in the table shows the percentages of the subgroups who said their lifestyle was similar to that in the Cosby Show. While more than a third of the respondents claimed to have a similar lifestyle, the differences among the technology subgroups are not significant.

The next two lifestyle variables, which deal with vacations and drinking, show significant differences both between TAFs and non-TAFS, and across all levels of media technology ownership. While 85 percent of TAFs took vacations in the last year, only 69 percent of non-TAFs did. Seventy-one percent of TAFs drink alcoholic beverages, while only 55 percent of non-TAFs drink. Even among non-TAFs, as media technology increases, vacations and drinking also increase. However, these differences can be explained to some extent by income levels, which are confounded with levels of media technology ownership.

No significant differences were found among technology subgroups on a political activity variable measuring whether respondents would likely vote in a coming election. Approximately 90 percent of all respondents said that they would be likely to vote.

Similarly, the technology subgroups do not differ on a religiosity variable assessing church attendance. Exactly 40 percent of TAfs and Non-TAFs attend church services.

On an attitude measure assessing opposition to the death penalty, opposition declined significantly as media technology increased across the four-level measure. Between TAFs and non-TAFs, the difference is not statistically significant.

Traditional media-use profile of Taffies

Traditional media uses by poll respondents also were measured. Table 6 compares these uses across the levels of newer media technology pertinent to this study. It is reasonable to assume that media uses of various kinds may be related. Other media uses also help to complete the characterization of technologically advanced families.

TABLE 6 ABOUT HERE

The media technology subgroups do not differ significantly on their watching of TV news or newspaper reading. TAFs do, however, tend to read newsmagazines more than do non-TAFs (42 percent versus 27 percent). While only half of non-TAFs had visited a library in a year, 81 percent of TAFs had visited a library. These data suggest that TAFs may rely less upon the more ephemeral news and information sources than do non-TAFs. Another interpretation that would be consistent with owning and operating media technology would simply be that TAFs are more willing to go to some trouble in order to acquire and use mediated information and

entertainment. The results for the final variable, listening to rock music, would not contradict this hypothesis. While 51 percent of TAFs ever listen to rock music, 72 percent of non-TAFs listen to rock. Across the four levels of media technology, rock music listening consistently rises with decreasing amounts of media technology. Some might say that rock music is the easiest thing to find in the media, especially through the ubiquitous medium of radio, and perhaps is the most ephemeral content. Some respondents may listen to more rock music simply because they have fewer media options available.

CONCLUSION

Media researchers and social scientists interested in the characteristics of technologically advanced families should be interested in the results obtained from our North Carolina sample. The penetrations of media technologies in North Carolina match national penetration data very closely.

As popular press accounts and marketing activity have suggested, Taffies do seem to have some unique demographic and psychographic characteristics. While social scientists are cautious about stereo-typing, marketing researchers often must stereotype in characterizing new market segments. As media researchers, we now cautiously present the following sterotype of a technologically advanced family.

Virtually by definition, Taffies have a home computer, a videocassette recorder, and a source of diversity in television programming either by means of cable TV or a satellite dish. Taffies are in a higher income and higher education group more often living in an urban setting. They are more likely to be married and to have school-age children. More Taffies take vacations and drink alcoholic beverages than do others. Taffies seem more willing to exert some effort to obtain and use information sources; besides operating their media technology at home, they go to the library and read newsmagazines more than others. Fewer Taffies listen to rock music, on the other hand, while they read newspapers and watch TV news the same as the rest of the population. They also go to church and vote in elections about as frequently as everyone else. Minorities also have their share of Taffies; race is not a factor associated with being a technologically advanced family.

Among all families, having a home computer is associated with having school-age children. Computers seem to be used to give children new opportunities, and VCRs seem to be used often for entertaining children. These technologies in the home may be the solution some parents have been seeking to the dilemma of inadequate, inappropriate and insufficient television programming for children.

Purchasing of prerecorded cassettes, as prices continue to fall, may be growing as a source of VCR fare. Our data do not contradict a trend toward the use of more prerecorded videos and away from time-shifting of other TV fare by recording programs. Of recent purchasers of VCRs, more use them "very often" to view movies than for timeshifting. But twice as many households that have had VCRs for three years or more use them "very often" for timeshifting as compared to those who have purchased VCRs within the last year.

An issue that we would have liked to have addressed concerns the principle of "high-tech/high-touch" expounded by John Naisbitt in the bestseller Megatrends (1982, ch. 2). Naisbitt has described a societal trend toward "high tech" and a countervailing social trend toward "high touch." He defines "high touch" as our compensatory human response to living in an increasingly high-tech world. His argument could be construed as a hypothesis that more contact with high technology is associated with increased religious or personal human values. While such a relationship was not observed in either our death-penalty attitude or religiosity variables, this study was not designed to test this hypothesis. Because Naisbitt's ideas have received such currency, however, other researchers using improved measures should investigate whether or not high-tech people hold more high-touch, human values.

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Table 1: Penetration of media technology in North Carolina and the United States

Percentage of Households with:	North Carolina* 1980	1982	1983	1986	United States** 1986
Cable Television	24	38	-	49	52
Videocassette Recorder	-	-	-	32	36
Personal Computer	-	-	06	14	19
Satellite Dish	-	-	-	06	01***

* North Carolina estimates are based on Carolina Polls, statewide telephone surveys administered in October 1980 (n=625), October 1982 (n=584), October 1983 (n=586), and February 1986 (n=585). "-" indicates that penetration for these media units was not asked for in that year's poll.

** Estimates for the United States are based on figures from The Yankee Group, reported in "High tech and the home." Newsweek, Feb. 17, 1986.

*** Estimated from Barbieri (1986b).

Table 2: Demographic characteristics of TAFs and non-TAFs (TAF = Technologically Advanced Family)

Number of Media Technology Units =		0	1	2	0-2	3+	
		Non-TAFs			All Non-TAFs	TAFs	p.*
	n=	(202)	(227)	(108)	(537)	(48)	
Household (HH) income***	$\bar{X}$	2.3	2.8	3.8	2.8	4.1	<.05
	sd	(1.4)	(1.4)	(1.4)	(1.5)	(1.5)	
Number of persons in HH	$\bar{X}$	1.9	1.9	2.2	2.0	2.3	<.05
	sd	(0.8)	(0.8)	(1.0)	(0.8)	(0.8)	
Last grade in school	$\bar{X}$	11.6	12.7	13.3	12.4	13.8	<.05
	sd	(3.3)	(3.0)	(2.3)	(3.1)	(3.5)	
Self-employed	%	15	19	12	16	27	ns
HH in SMSA	%	47	52	68	53	60	**
Race (white)	%	76	85	84	82	81	ns
Married	%	49	60	67	57	71	**
School-age children in HH	%	28	35	40	33	60	<.05

* Significance tests were conducted separately for four levels of households (0, 1, 2, 3+ media units) and between Non-TAFs (0-2) and TAFs (3+). Where means are reported, the F statistic was tested (ANOVA) and where percentages are reported, the Chi-square test was used.

** Chi-square significant when comparing 4 groups (<.05). Non-significant for comparison between All Non-TAF and TAF households.

*** 1 = <$10,000, 2 = $10,001-20,000, 3 = $20,001-30,000, 4 = $30,001-40,000, 5 = $40,001-50,000, 6 = more than $50,000.

Table 3: VCR uses by length of time VCR in household

Percentage who use VCR "very often" to:	Have had VCR for: less than one year (N=92)	one to two years (N=63)	3 or more years (N=31)	p.*
Entertain children	25	19	26	ns
Entertain adults	17	19	13	ns
View movies have rented, bought or borrowed	45	37	29	ns
View regular TV shows at more convenient time (time-shifting)	29	33	61	<.Ø5

*Chi-square test of statistical significance across levels of length of ownership.

Table 4. Computer penetration in homes as related to the presence of school-age children in the home

	School-age children present	No school-age children present	p.*
Computer penetration in all homes (%)	24 (n=206)	9 (n=378)	<.05
Computer penetration in Non-TAF homes (%)	12 (n=177)	5 (n=359)	<.05

* Chi-square test of statistical significance.

Table 5: Psychographic characteristics of TAFs and Non-TAFs (TAF = Technologically Advanced Family)

Number of Media Technology Units =		Ø	1	2	Ø-2	3+	
		Non-TAFs			All Non-TAFs	TAFs	p.*
	n=	(202)	(227)	(108)	(537)	(48)	
Lifestyle like "Bill Cosby"	%	37	34	41	36	49	ns
Took vacation in 1985	%	61	68	83	69	85	<.Ø5
Drinks alcohol	%	38	58	77	55	71	<.Ø5
Likely to vote in May election	%	86	88	93	88	9Ø	ns
Attends church	%	35	42	44	4Ø	4Ø	ns
Opposes capital punishment	%	33	29	2Ø	24	15	**

* Significance tests were conducted separately for four levels of households (Ø, 1, 2, 3+ media units) and between Non-TAFs (Ø-2) and TAFs (3+). The Chi-square test was used.

** Chi-square significant when comparing 4 groups (<.Ø5). Non-significant for comparison between TAF and NON-TAF households.

Table 6: Media Use Characteristics of TAFs and Non-TAFs

Number of Media Technology Units =		Ø	1	2	Ø-2	3+	
		Non-TAFs			All Non-TAFs	TAFs	p.*
	n=	(202)	(227)	(108)	(537)	(48)	
Days per week watch TV news	$\bar{X}$	5.5	5.4	5.0	5.4	5.2	ns
	sd	(2.2)	(2.1)	(2.0)	(2.1)	(2.3)	
Days per week read newspaper	$\bar{X}$	4.1	4.1	4.6	4.2	4.7	ns
	sd	(2.9)	(2.8)	(2.6)	(2.8)	(2.6)	
Read newsmagazine in last 2 weeks	%	20	23	46	27	42	<.05
Visited library in past year	%	43	51	62	50	81	<.05
Listen to rock music	%	80	71	60	72	51	<.05

* Significance tests were conducted separately for four levels of households (Ø, 1, 2, 3+ media units) and between Non-TAFs (Ø-2) and TAFs (3+). Where means are reported, the F statistic was tested (ANOVA) and where percentages are reported, the Chi-square test was used.